

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A ~~novel structure for a photodiode of an image sensor~~, comprising:

at least one photodiode region formed in a semiconductor substrate; and

at least one transistor;

wherein the photodiode region comprises:

a p-type region extending to a surface of the semiconductor substrate; and

an n well region formed in said p-type region, wherein the n well region comprises a

bar portion and a plurality of parallel finger portions extending from the

bar portion, and the bar portion is electrically connected to the transistor

via a connection.

~~a p-type region extending to the surface of a semiconductor substrate;~~

~~a multiplicity of parallel finger-like n-wells formed in said p-type region that are connected~~

~~to a conductive region at one end.~~

2. (original) The structure of claim 1 wherein said p-type region is a p-substrate.

3. (original) The structure of claim 1 wherein said p-type region is a p-well.

4. (currently amended) The structure of claim 1 wherein said parallel ~~finger-like n-wells~~ finger portions are formed by phosphorous ion implantation.

5. (currently amended) The structure of claim 1 wherein the depth of said parallel ~~finger-like n~~
~~wells~~ finger portions is between about 1 and 5 microns.
6. (currently amended) The structure of claim 1 wherein the width of said parallel ~~finger-like n~~
~~wells~~ finger portions is between about 0.5 and 2 microns.
7. (currently amended) The structure of claim 1 wherein the separation of said parallel ~~finger-like n~~
~~wells~~ finger portions is between about 0.5 and 2 microns.
8. (currently amended) The structure of claim 1 wherein the number of said parallel ~~finger-like n~~
~~wells~~ finger portions is greater than 3.
9. (currently amended) A method of fabricating a ~~novel~~ structure for a ~~photodiode~~ of an image
sensor, comprising:
- forming at least one photodiode region formed in a semiconductor substrate; and
- providing at least one transistor;
- wherein formation of the photodiode region comprises:
- forming a p-type region extending to a surface of the semiconductor substrate; and
- forming an n well region formed in said p-type region, wherein the n well region
- comprises a bar portion and a plurality of parallel finger portions extending
- from the bar portion, and the bar portion is electrically connected to the
- transistor via a connection.
- ~~Providing a p-type region extending to the surface of a semiconductor substrate;~~

~~Forming a multiplicity of parallel finger like n-wells formed in said p-type region that are
connected to a conductive region at one end.~~

10. (original) The method of claim 9 wherein said p-type region is a p-substrate.

11. (original) The method of claim 9 wherein said p-type region is a p-well.

12. (currently amended) The method of claim 9 wherein said parallel ~~finger like n-wells~~ finger portions are formed by phosphorous ion implantation.

13. (currently amended) The method of claim 9 wherein the depth of said parallel ~~finger like n-wells~~ finger portions is between about 1 and 5 microns.

14. (currently amended) The method of claim 9 wherein the width of said parallel ~~finger like n-wells~~ finger portions is between about 0.5 and 2 microns.

15. (currently amended) The method of claim 9 wherein the separation of said parallel ~~finger like n-wells~~ finger portions is between about 0.5 and 2 microns.

16. (currently amended) The method of claim 9 wherein the number of said parallel ~~finger like n-wells~~ finger portions is greater than 3.